TOTTOT "S8hS7660

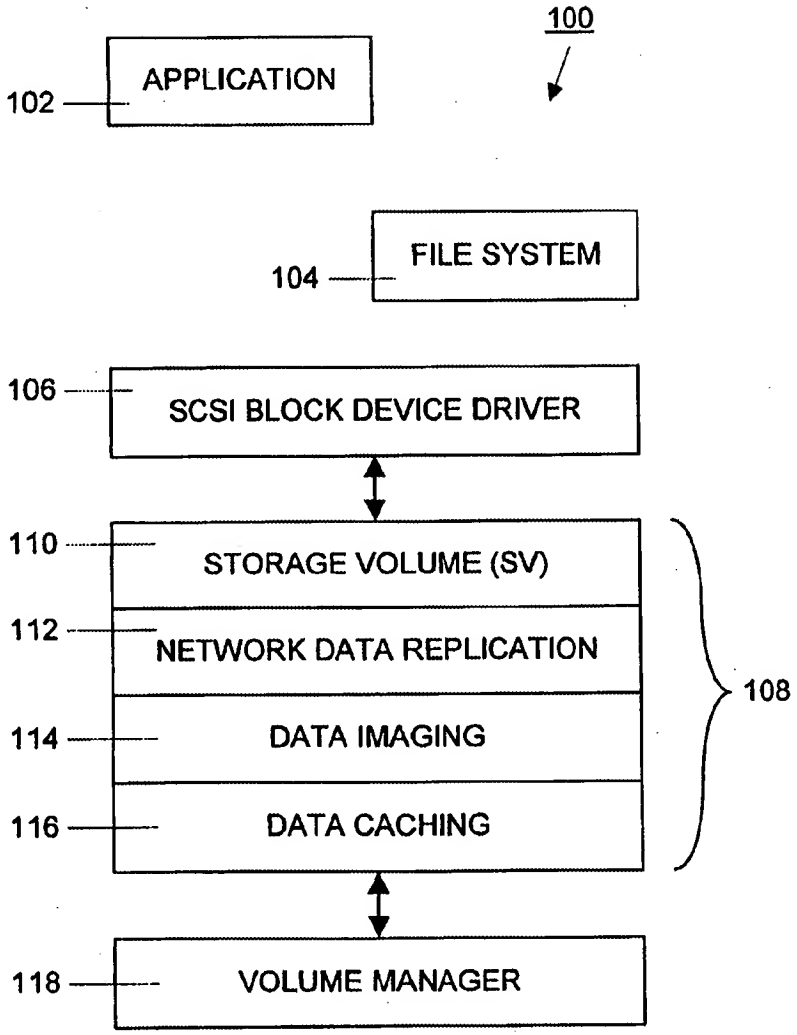

FIG. 1A

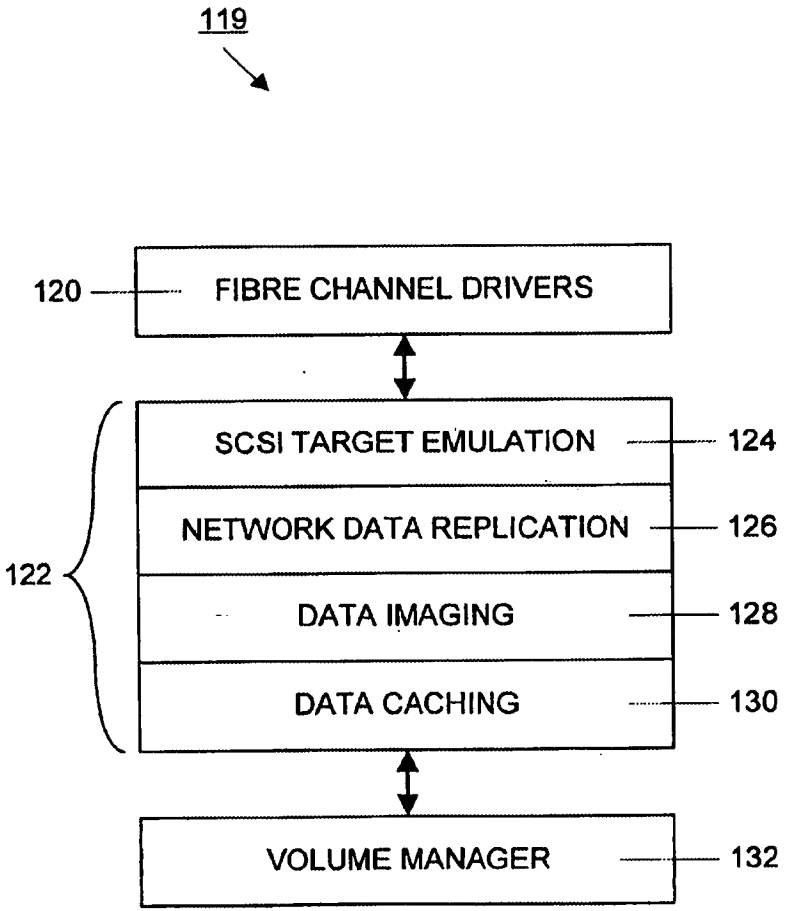

FIG. 1B

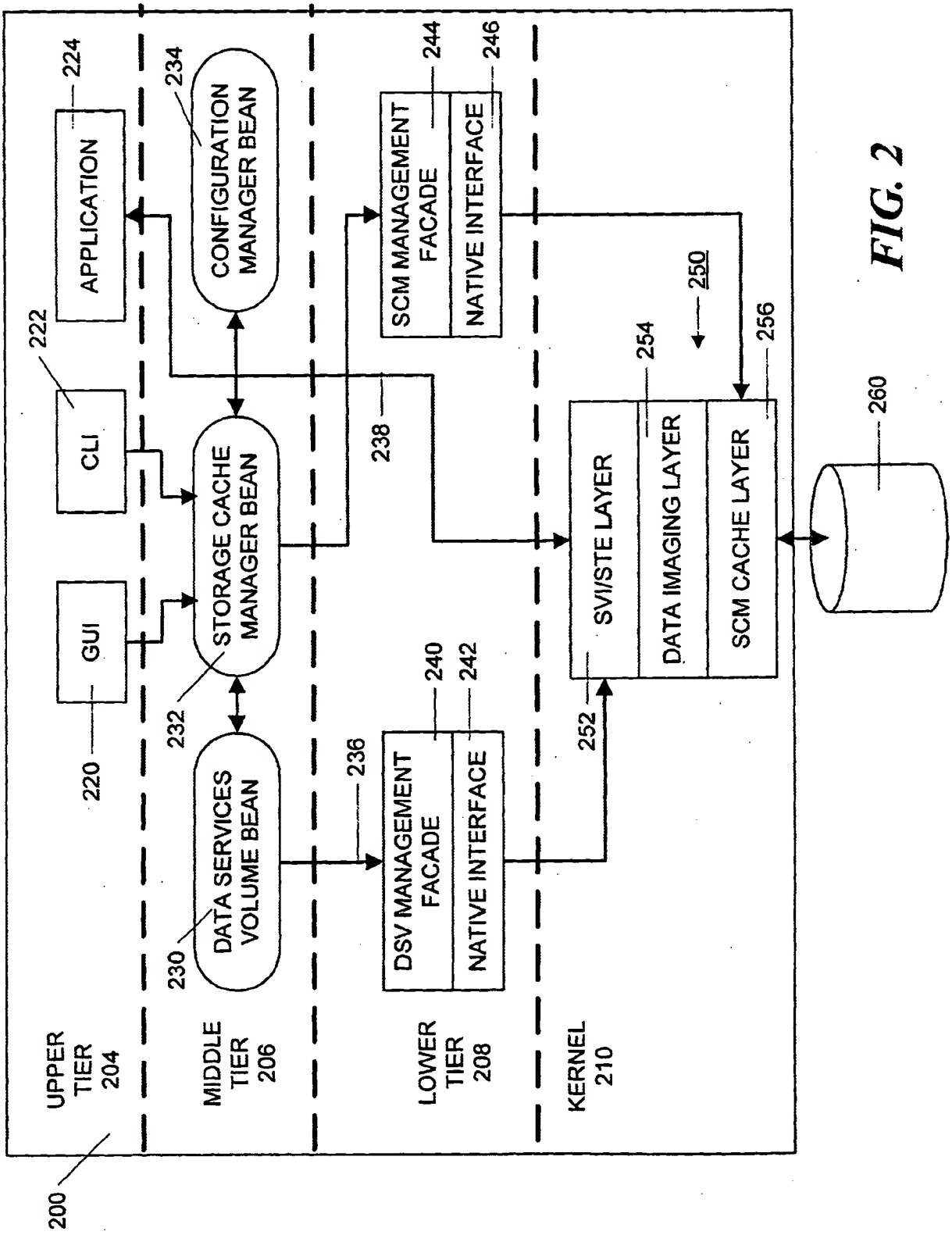
200
UPPER TIER 204
MIDDLE TIER 206
LOWER TIER 208
KERNEL 210
APPLICATION
224
CONFIGURATION MANAGER BEAN
234
CLI
222
GUI
220
STORAGE CACHE MANAGER BEAN
232
DATA SERVICES VOLUME BEAN
230
DSV MANAGEMENT FACADE
240
NATIVE INTERFACE
242
236
SCM MANAGEMENT FACADE
244
NATIVE INTERFACE
246
238
250
SVI/STE LAYER
252
DATA IMAGING LAYER
254
SCM CACHE LAYER
256
260

FIG. 2

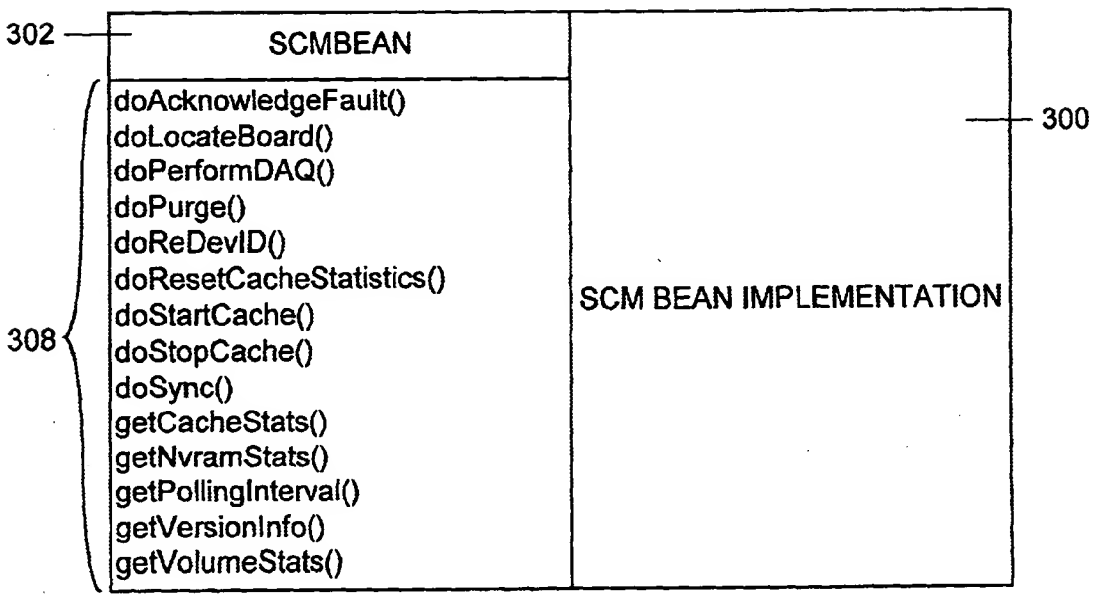
302
SCMBEAN
doAcknowledgeFault()
doLocateBoard()
doPerformDAQ()
doPurge()
doReDevID()
doResetCacheStatistics()
doStartCache()
doStopCache()
doSync()
getCacheStats()
getNvramStats()
getPollingInterval()
getVersionInfo()
getVolumeStats()
308
300
SCM BEAN IMPLEMENTATION

FIG. 3

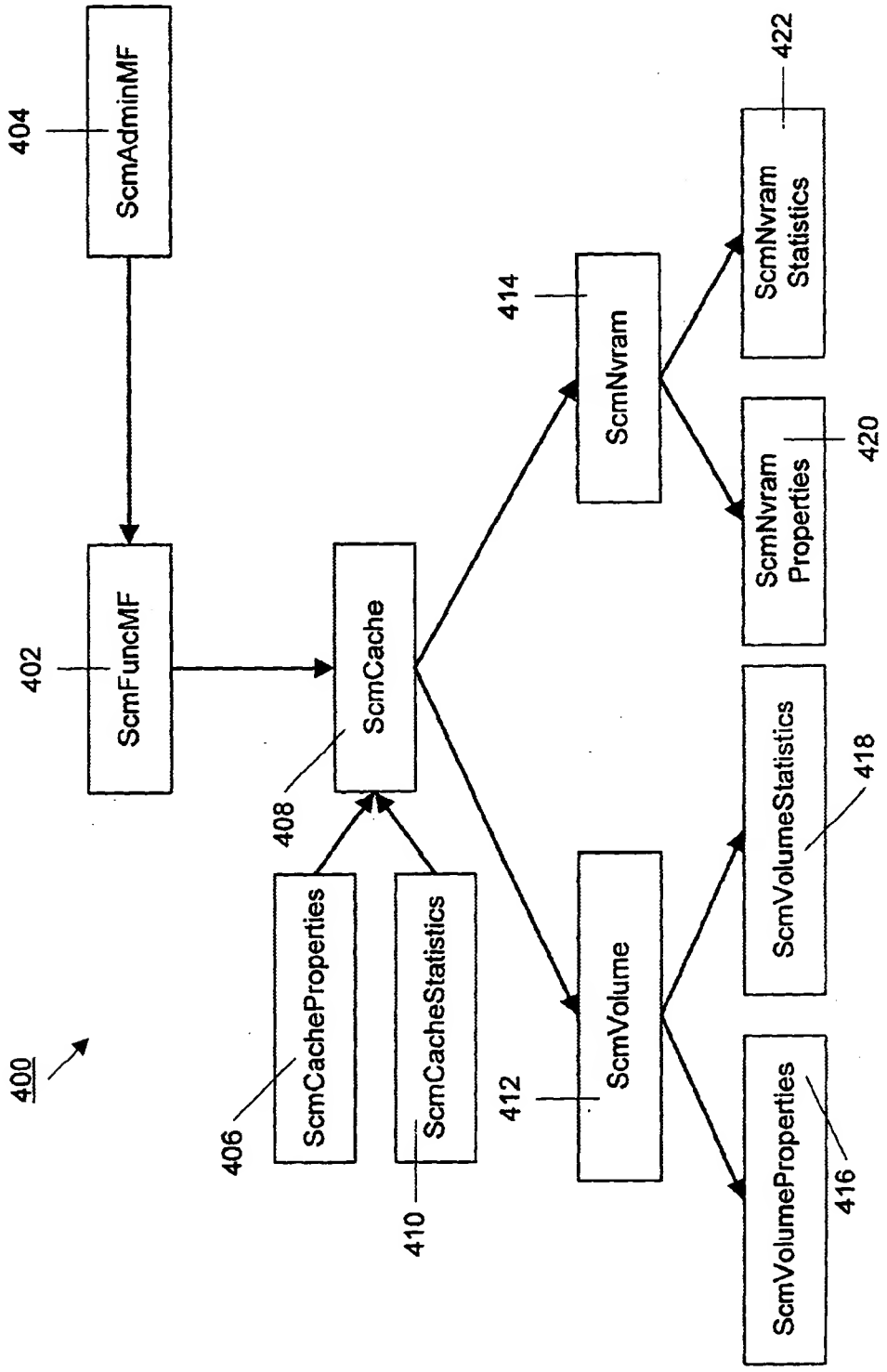
400
ScmAdminMF
404
ScmFuncMF
402
ScmCache
408
ScmCacheProperties
406
ScmCacheStatistics
410
ScmNvram
414
ScmVolume
412
ScmNvram Statistics
422
ScmNvram Properties
420
ScmVolumeStatistics
418
ScmVolumeProperties
416

FIG. 4

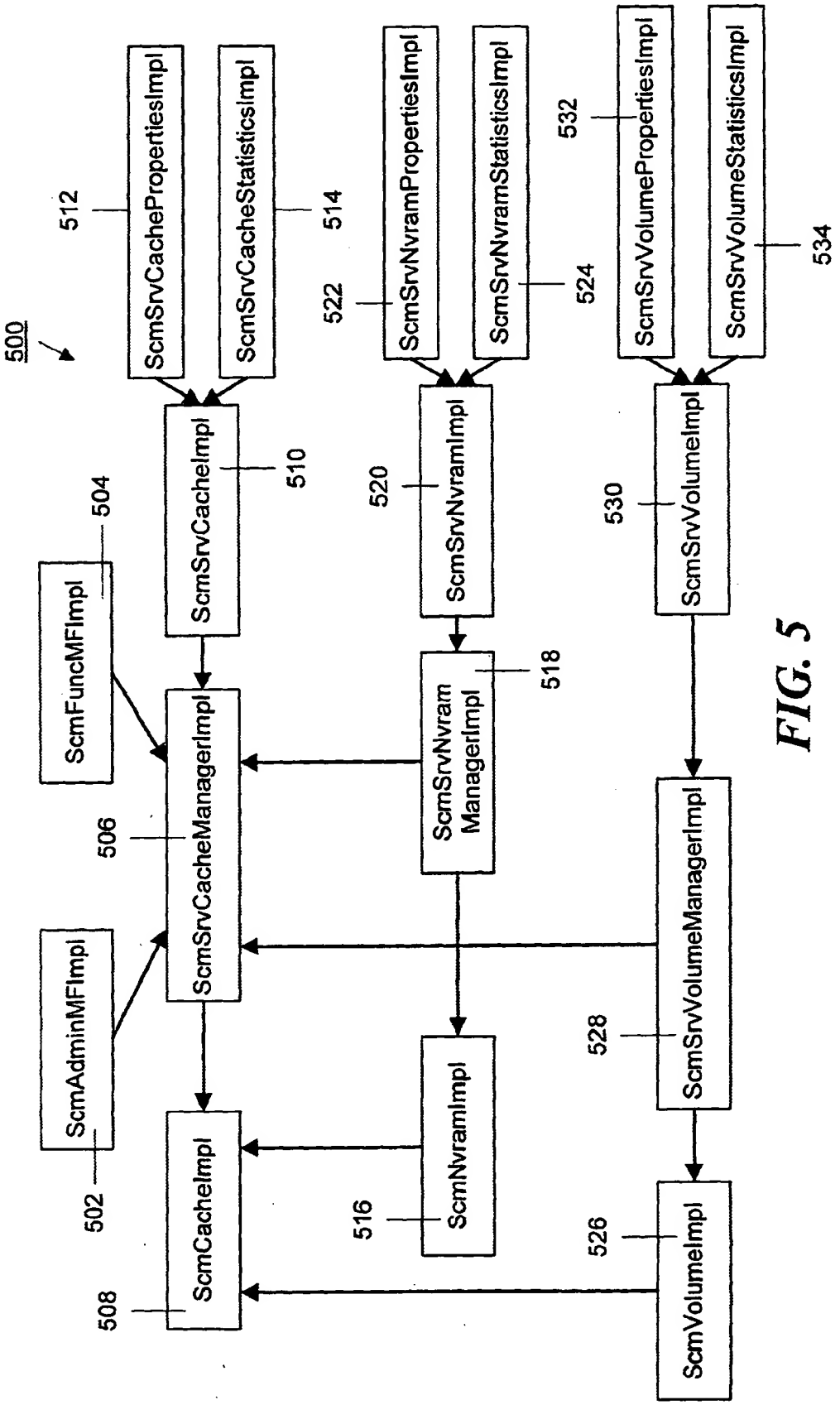
500
ScmSrvCachePropertiesImpl
512
ScmSrvCacheStatisticsImpl
514
ScmSrvNvramPropertiesImpl
522
ScmSrvNvramStatisticsImpl
524
ScmSrvVolumePropertiesImpl
532
ScmSrvVolumeStatisticsImpl
534
ScmSrvCacheImpl
510
ScmSrvNvramImpl
520
ScmSrvVolumeImpl
530
ScmFuncMFImpl
504
ScmSrvCacheManagerImpl
506
ScmSrvNvram ManagerImpl
518
ScmSrvVolumeManagerImpl
528
ScmAdminMFImpl
502
ScmCacheImpl
508
ScmNvramImpl
516
ScmVolumeImpl
526

FIG. 5

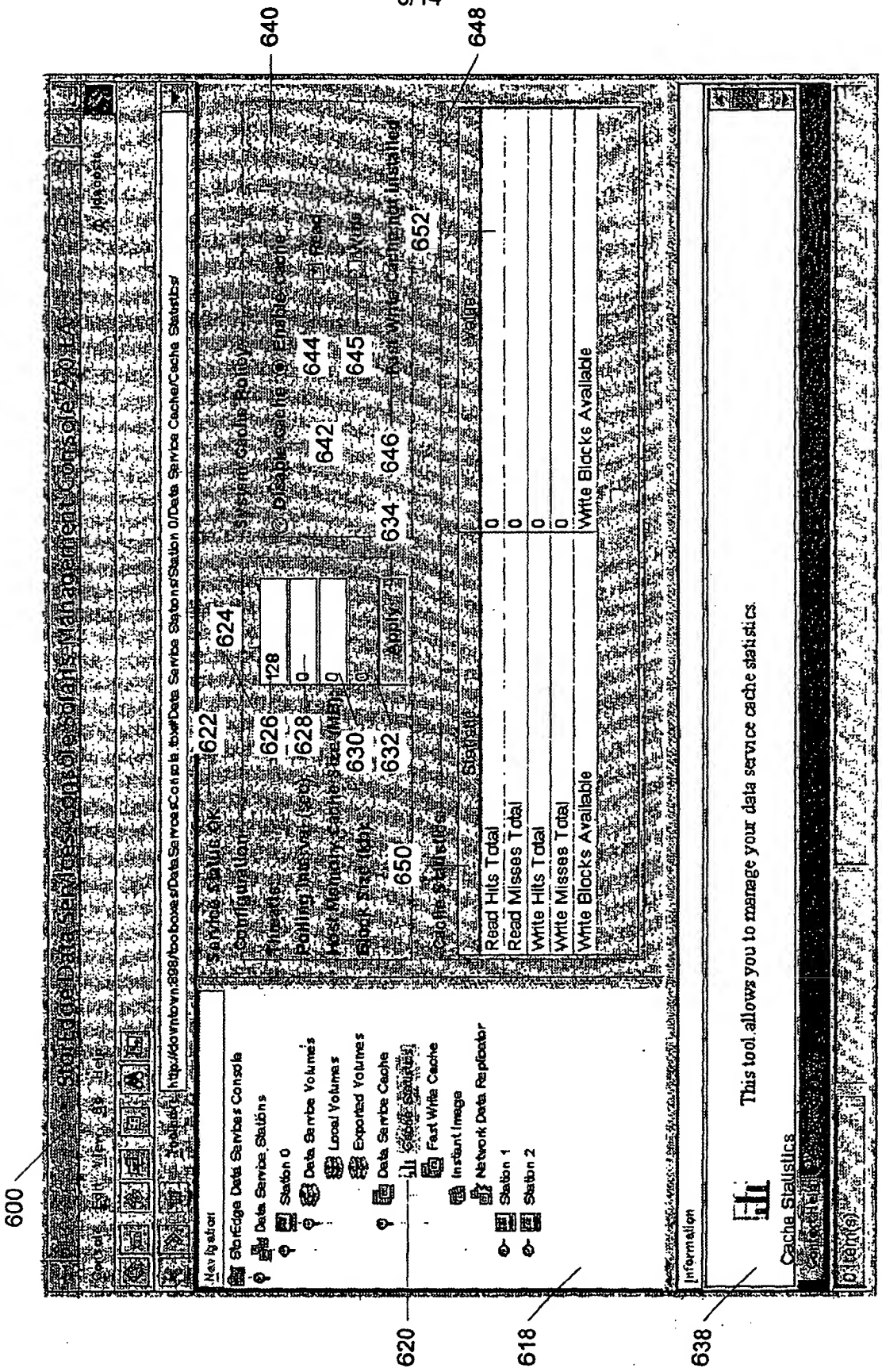
600
620
618
638
640
648
622
624
626
628
630
632
634
636
642
644
645
646
650
652
Cache Statistics
This tool allows you to manage your data service cache statistics.
Read Hits Total
Read Misses Total
Write Hits Total
Write Misses Total
Write Blocks Available
Apply
Refresh

FIG. 6

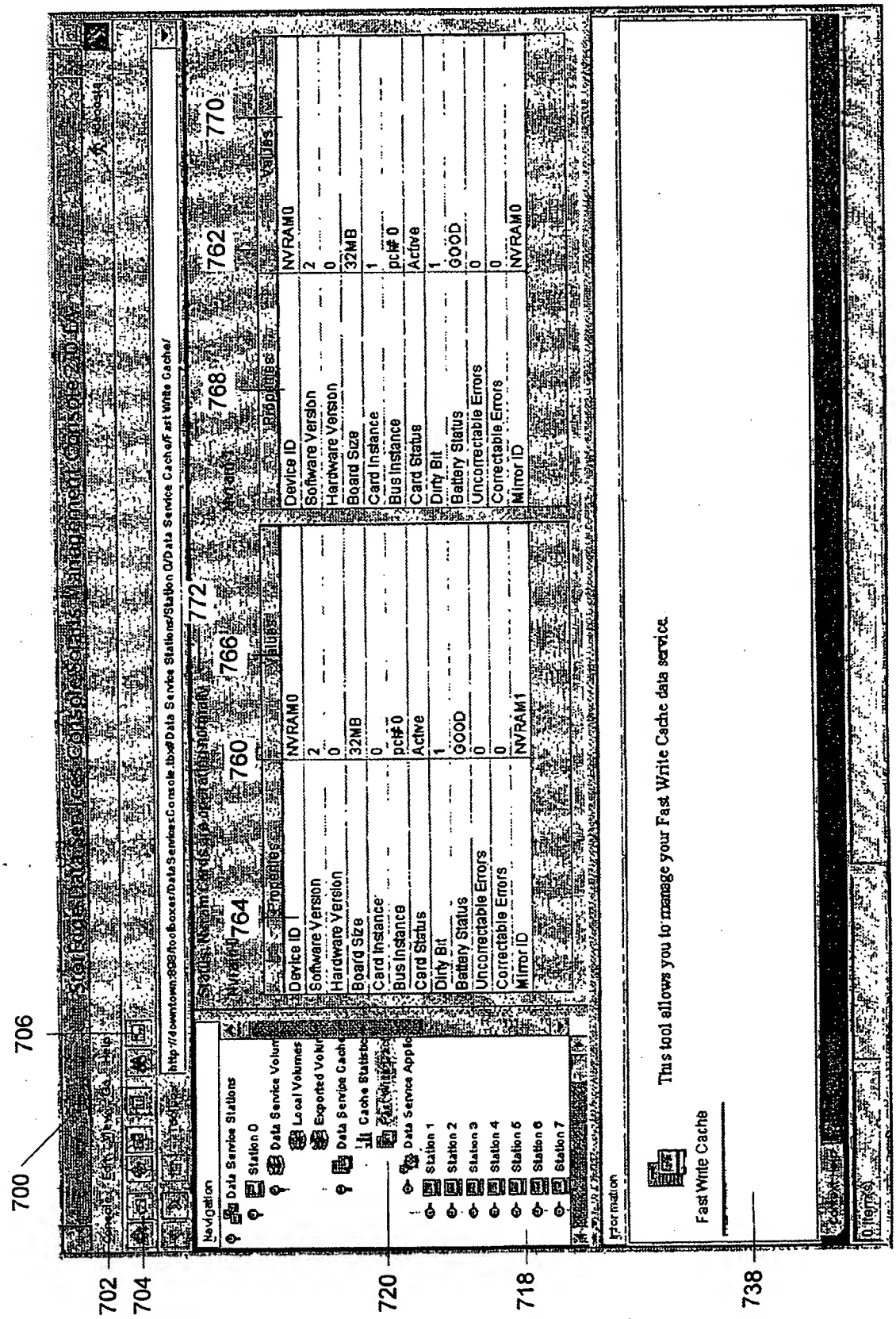
700
702
704
706
718
720
738
760
762
764
766
768
770
772
Navigation
Data Service Stations
Station 0
Station 1
Station 2
Station 3
Station 4
Station 5
Station 6
Station 7
Properties
Values
Device ID
NVRAM0
Software Version
Hardware Version
Board Size
Card Instance
Bus Instance
Card Status
Dirty Bit
Battery Status
Uncorrectable Errors
Correctable Errors
Mirror ID
NVRAM1
Information
This tool allows you to manage your Fast Write Cache data service.
Fast Write Cache

FIG. 7

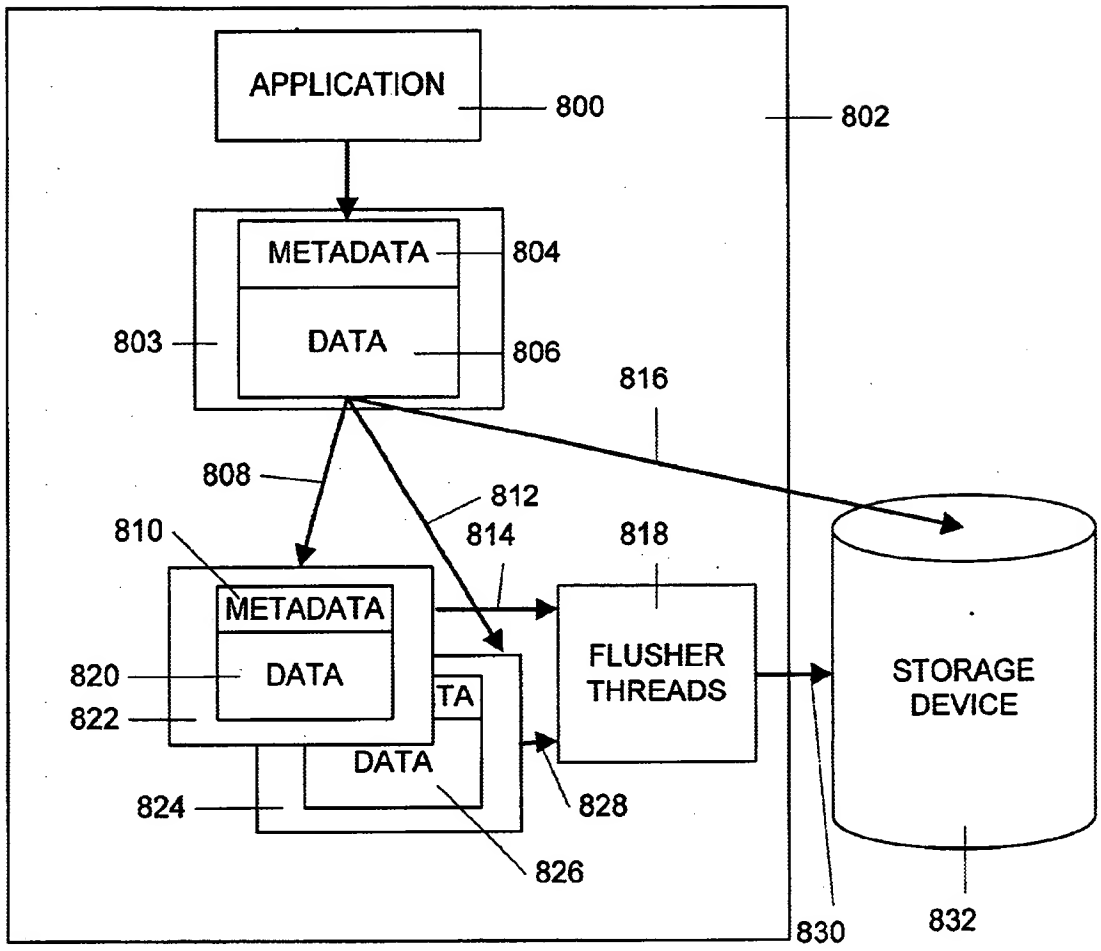
APPLICATION
800
802
METADATA
804
803
DATA
806
816
808
812
810
814
818
METADATA
820
DATA
822
TA
DATA
824
826
828
FLUSHER THREADS
STORAGE DEVICE
830
832

FIG. 8

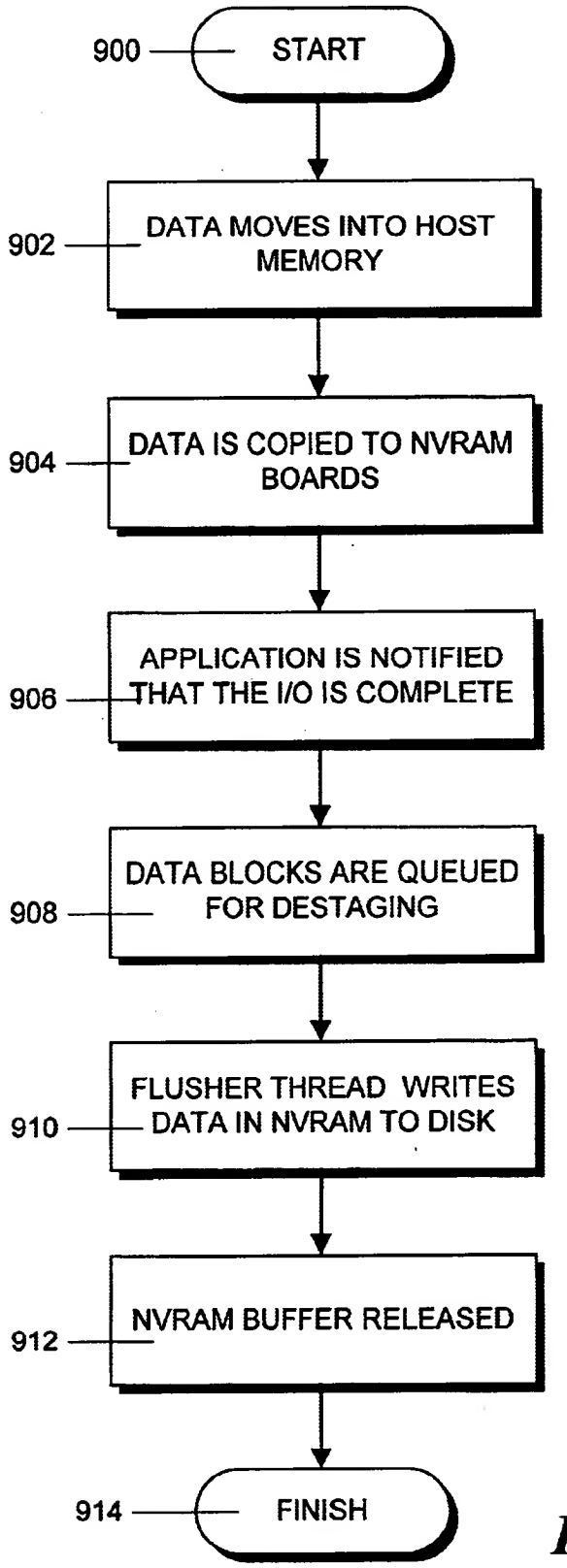
900
START
902
DATA MOVES INTO HOST MEMORY
904
DATA IS COPIED TO NVRAM BOARDS
906
APPLICATION IS NOTIFIED THAT THE I/O IS COMPLETE
908
DATA BLOCKS ARE QUEUED FOR DESTAGING
910
FLUSHER THREAD WRITES DATA IN NVRAM TO DISK
912
NVRAM BUFFER RELEASED
914
FINISH

FIG. 9

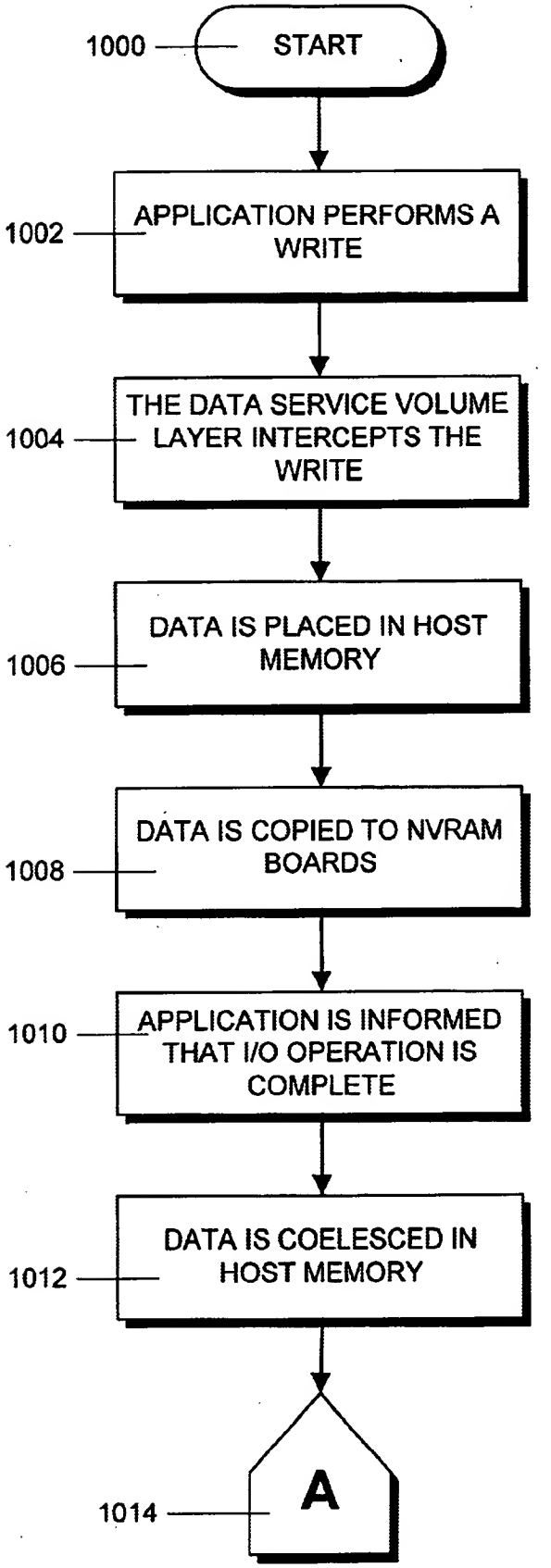
1000
START
1002
APPLICATION PERFORMS A WRITE
1004
THE DATA SERVICE VOLUME LAYER INTERCEPTS THE WRITE
1006
DATA IS PLACED IN HOST MEMORY
1008
DATA IS COPIED TO NVRAM BOARDS
1010
APPLICATION IS INFORMED THAT I/O OPERATION IS COMPLETE
1012
DATA IS COELESCED IN HOST MEMORY
1014
A

FIG. 10A

Docket: P5983 - 021127

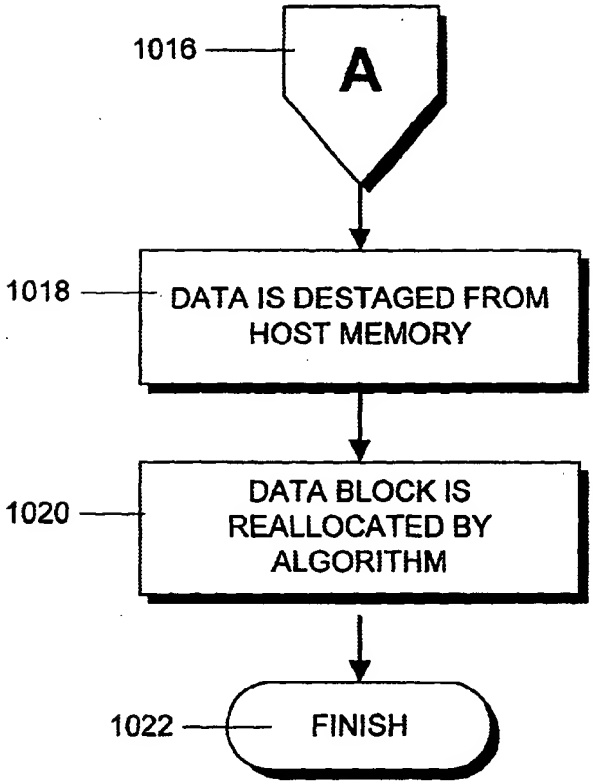

FIG. 10B

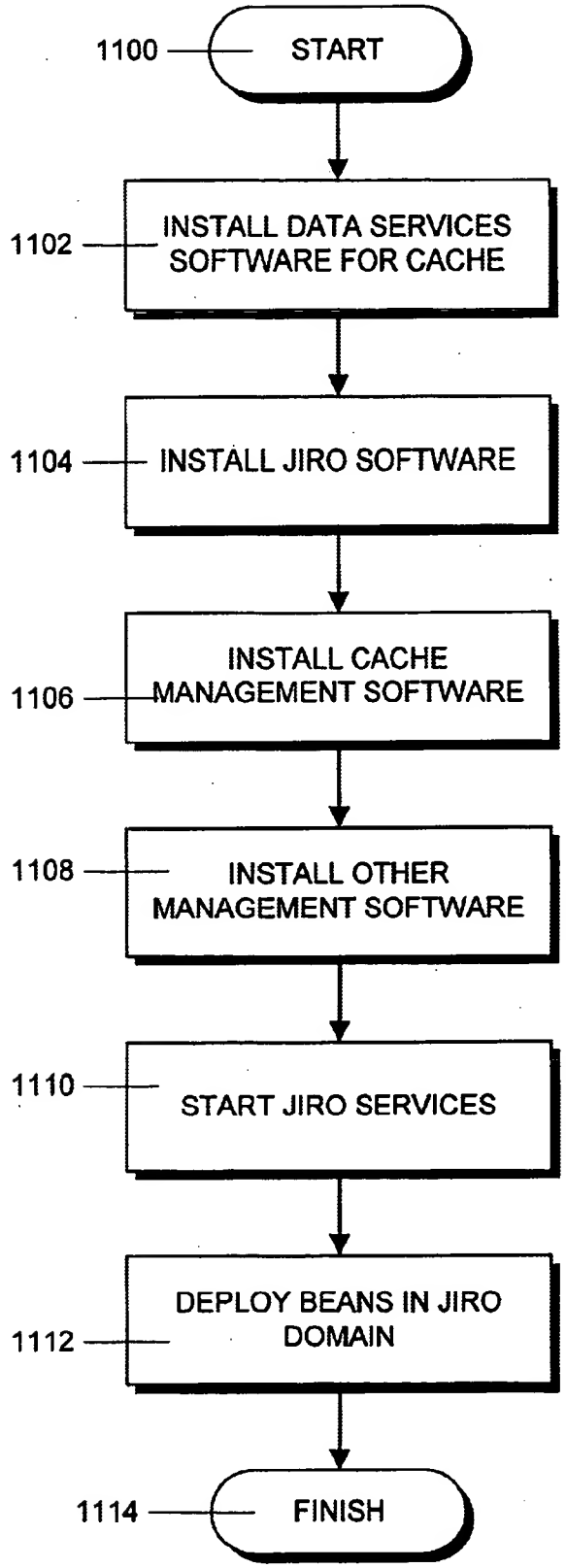
1100
START
1102
INSTALL DATA SERVICES SOFTWARE FOR CACHE
1104
INSTALL JIRO SOFTWARE
1106
INSTALL CACHE MANAGEMENT SOFTWARE
1108
INSTALL OTHER MANAGEMENT SOFTWARE
1110
START JIRO SERVICES
1112
DEPLOY BEANS IN JIRO DOMAIN
1114
FINISH

FIG. 11

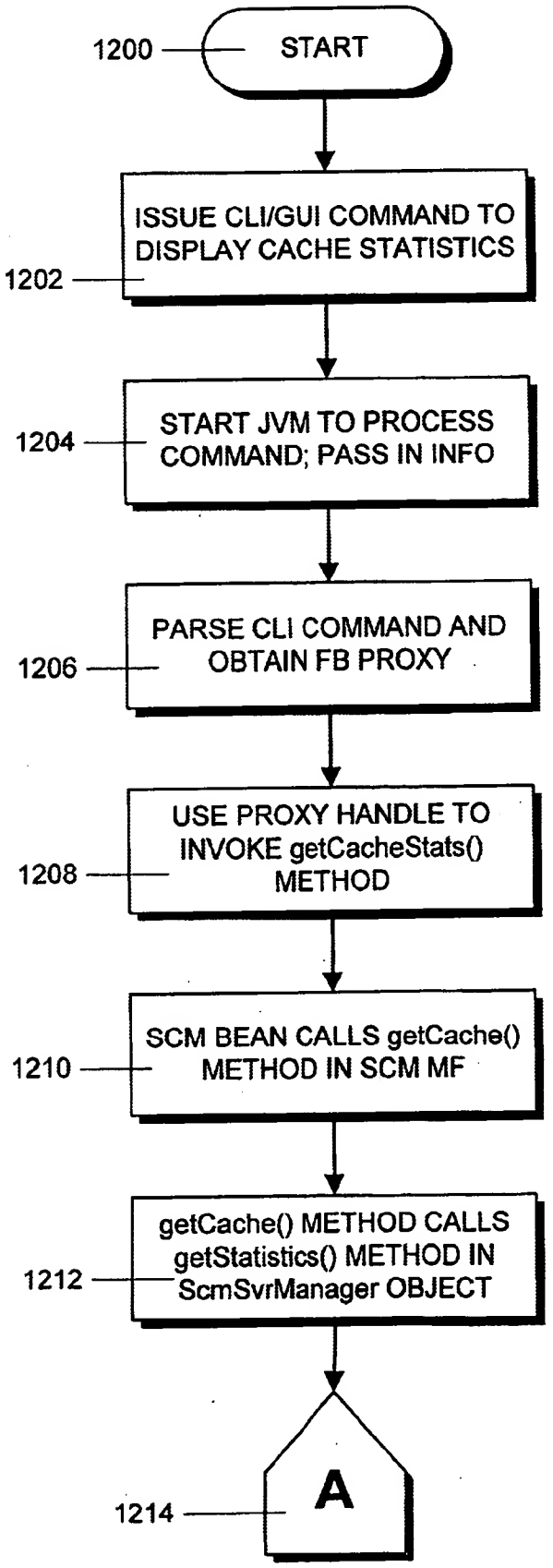
1200
START
ISSUE CLI/GUI COMMAND TO DISPLAY CACHE STATISTICS
1202
START JVM TO PROCESS COMMAND; PASS IN INFO
1204
PARSE CLI COMMAND AND OBTAIN FB PROXY
1206
USE PROXY HANDLE TO INVOKE getCacheStats() METHOD
1208
SCM BEAN CALLS getCache() METHOD IN SCM MF
1210
getCache() METHOD CALLS getStatistics() METHOD IN ScmSvrManager OBJECT
1212
A
1214

FIG. 12A

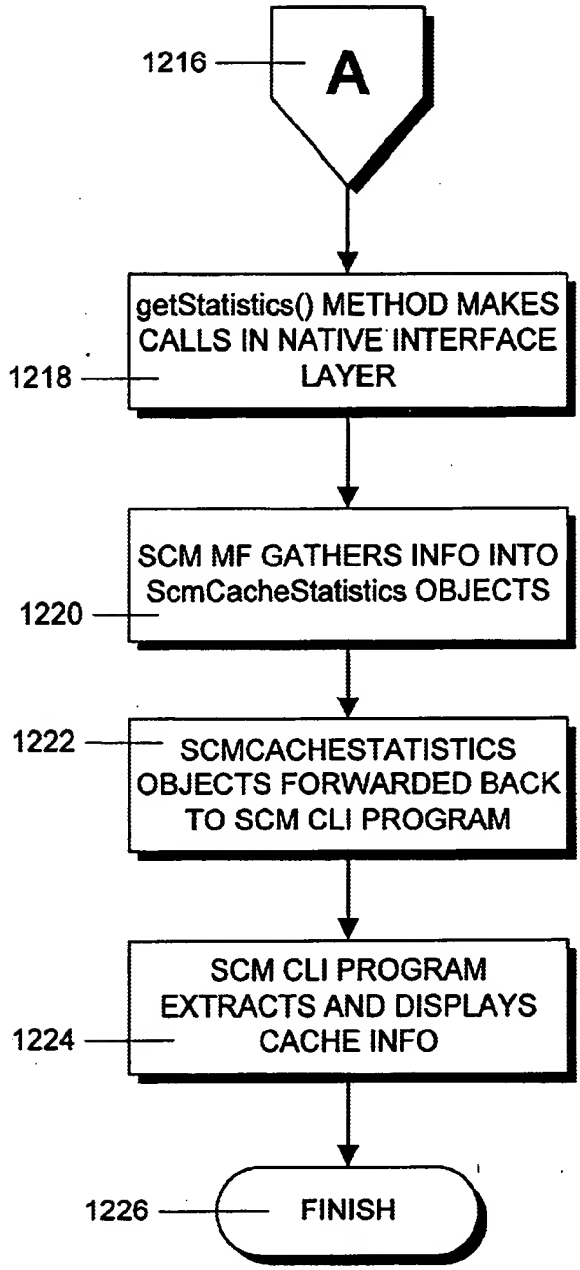
1216
A
getStatistics() METHOD MAKES CALLS IN NATIVE INTERFACE LAYER
1218
SCM MF GATHERS INFO INTO ScmCacheStatistics OBJECTS
1220
1222
SCMCACHESTATISTICS OBJECTS FORWARDED BACK TO SCM CLI PROGRAM
SCM CLI PROGRAM EXTRACTS AND DISPLAYS CACHE INFO
1224
1226
FINISH

FIG. 12B